

ZYK4 S

✓ 34 Analysis of sulphonamides. J. Volterra and  
L. C. Laddie, *J. Chem. Ed.*, 1954, 46,  
pp. 1096-1098. An strongly dilute solution (0.5 M)  
per cent KOH) sulphonamide with a primary  
amino group give an orange to red coloration on  
treatment with 0.1 M  $\text{K}_3\text{Fe}(\text{CN})_6$ . The reaction  
although slow can be used to test for primary  
and secondary methods can be used to test for  
and determination of sulphur and carbon  
excretion is obtained after 2 min with absorption  
max at 420 m $\mu$ .

(1)

ZYKA, J.

Hydrazinium sulfate as a volumetric reagent ( hydrazinometry) IV.  
Potentiometric microdetermination of gold. p. 1768

Vol. 48, no. 12, Dec. 1954  
CHEMICKE LISTY  
Praha, Czechoslovakia

So: Eastern European Accession Vol. 5, No. 4, 1956

ADAMOVÁ, Eva; ŽYKA, Jaroslav

Complex titration in pharmaceutic analysis. IX. Determination of  
codeine phosphate. Česk. farm. 4 no.1:9-10 Jan 55.

1. Z katedry analyticky chemie Karlovy univerzity v Praze.  
(CODEINE,  
phosphate, determ., complex titration technic)

SOUCKOVA, Milena; ZYKA, Jaroslav

Polarimetric titration of organic bases. I.; titration by silicotungstic acid. Cesk. farm. 4 no.4:181-185 May 55.

1. Z katedry analyticky chemie Karlovy university.

(TUNGSTEN derivatives

silicotungstic acid, titration of organic bases,  
polarimetric)

(ALKALOIDS, determination

in pharmaceutic prep., polarimetric titration by  
silicotungstic acid.)

Zafka, J.

✓ 448 New volumetric methods in the analysis of organic substances. I. Determination of allyl thiocyanate. A. Berka and J. Zafka (Karlovy Vary, Prague, Czechoslovakia) ČASOSV Farmac. 1953, 6 (8), 243-251 — The present methods of analysis and their drawbacks are discussed. A more convenient and rapid method was developed, based on the conversion of allyl thiocyanate into allylthiourea by boiling with aq. NH<sub>3</sub>. The allylthiourea is then titrated with a standard solution of an oxidizing agent; a potentiometric method being used for end-point determination. Details of the titration with KIO<sub>3</sub> and KBrO<sub>3</sub> are given. The iodate titration is carried out in N HCl; the end-point is taken as the first inflection (occurring at  $\approx$  120 mV) of the initially steady value of the potential. The same applies to the bromate titration, but here the medium is 7 N HCl at 80° C., to which a small amount of KBr is added. The inflection occurs at  $\approx$  100 mV. In both cases an electronic voltmeter is used, the indicating electrodes being platinum wires and the comparing electrode the SCE. The procedures for determining allylthiocyanate in the oil seed and alcoholic extract of mustard are also given. The method can also be applied to the determination of thioesters.

A. O. Jakunovic

Z.

✓ 624 Coupling reactions of p-diazobenzoicphenoic acid. I. Photometric determination of this drug.  
V. Borka and J. Zivkovic. Bulletin of the Chemical  
Society of Yugoslavia. Experiments, 1966, 4, 3  
229-233. The photometric determination of  
coupling products of diazobenzoicphenoic acids  
and 4-nitrophenylhydrazine in aqueous solution  
by the time-dependent method is described. By  
monitoring the absorption of the coupling products  
coupled with the diazo component diphenylbenzidine, I  
temperature and pH must be carefully controlled.  
Miller pH meter is used and the temperature of about 25°C  
is used. At a large excess of I it is used the coupling in  
liquid, but even a slight excess allows the detection  
to be completed in an hour and the color does not  
change in intensity even after 34 hr. Maximum  
absorption is at  $\approx 450$  m $\mu$  in all cases.  
A. O. JAKOBOVIC

SOUCKOVA, Milena; ZYKA, Jaroslav

Polarometric titration of organic bases. II. Titration with  
phosphotungstic and phosphomolybdic acids. Cesk. farm.  
4 no.5:227-230 June 55.

1. Z Katedry analyticky chemie Karlovy university v Praze.

(TUNGSTEN

phosphotungstic acid, use in polarimetric  
titration of organic bases.)

(MOLYBDENUM

phosphomolybdic acid, use in polarimetric  
titration of organic bases)

ZYKA, Jaroslav

Polarometric study of the cadmium salts of citric and tartaric acids. Cesk. farm. 4 no.5:230-231 June 55.

1. Katedra analyticky chemie Karlovy university v Praze.  
(CITRATES

citric acid, precipitation reaction with cadmium salts, polarometry)

(ACIDS

tartaric, precipitation reaction with cadmium salts, polarometry)

(CADMIUM

salts, precipitation reaction of citric & tartaric acids, polarometry)

ZYKA, Jaroslav

Polarometric titration of organic bases. III. Titration of picric  
picrolonic, styphnic, flavianic acids, and of sodium alizarine  
sulfonate. Cesk.farm. 4 no.6:301-305 J1 '55.

1. Z katedry analyticky chemie Karlovy univerzity v Praze.

(CHEMICAL ANALYSIS,

polarometric titration of organic bases)

(ACIDS, determination,

organic acids, polarometric titration)

Z Y K A

BERKA, Antonin; ZYKA, Jaroslav

Coupling reaction with p-diazobenzenosulfonic acid. II. Colorimetric  
and oscillographic studies. Česk.farm. 4 no.6:305-308 J1 '55.

1. Z Ustavu pro chemii analytickou Karlovy university v Praze.  
(BENZENE, derivatives,  
p-diazobenzenosulfonic acid, colorimetry & oscillography)  
(COLORIMETRY,  
of p-diazobenzenosulfonic acid)

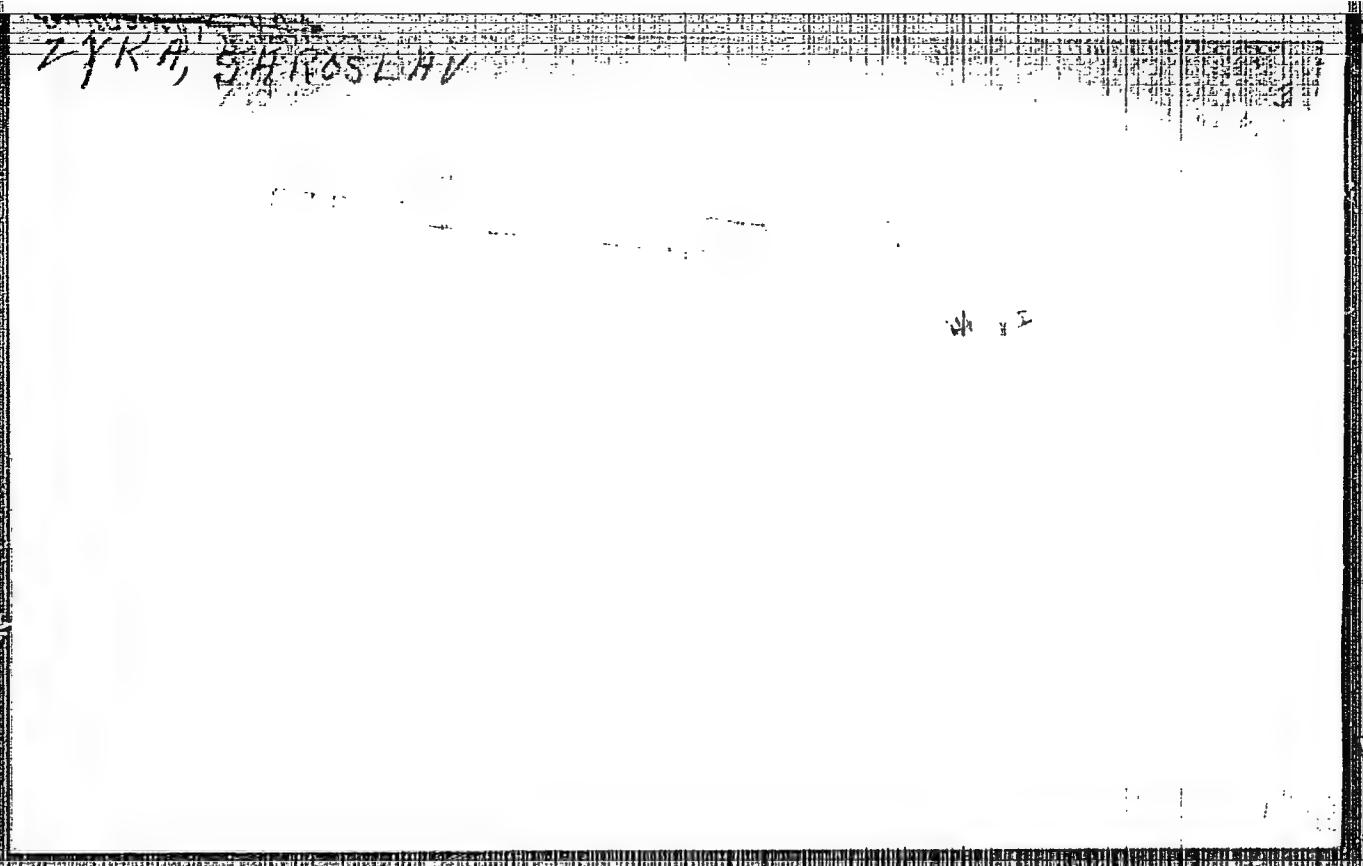
ZYT - 1  
CZECH

Polarometric titrations of organic bases containing nitrogen heterocyclic acids and azo-compounds. I. Titration of several heterocyclic acids (silver-tungstate and phosphotungstate acid, phosphomolybdic acid, and nitro compounds: nitric acid, picric acid, strophantidin and Na chlorate sulfate) were made in sulfuric acid. The metric equivalent of each acid was determined by the alkaloids. In these titrations, the dropping Hg electrode was used as cathode, and the saturated calomel electrode as anode. Changes in current voltage were always associated with excesses of the polarographically reducible titration reagent. The conditions governing pH, quantitatively and in relation to molar ratios were determined. Proline-HCl, sarcosine, dihydroxy- $\alpha$ -methyl- $\beta$ -phosphate,  $\gamma$ -arginine-HCl, atrazine sulfate, sarcosine citonamate, quinine-HCl and sarcosine-HCl were successfully titrated with silver-tungstate acid, atrazine, ammonium, sodium phosphate,  $\gamma$ -arginine-HCl, strechamine citonamate-HCl, sarcosine-HCl, and sarcosine-HCl.

Yours sincerely,  
G. M. Hocking

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CIA-RDP86-00513R002065810003-6



APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002065810003-6"

ZYKA J

6834 Hydrazinometry, a new type of redox-

ometric titration. J. Zika and V. Vojtěch

Published online: 20 Oct 2004 00:00:00 in *J. Chem. Educ.*

ISSN: 0021-9588 DOI: 10.1021/ed0834-001-1-172 © 1957 American Chemical Society  
Hydrazine sulphite can be prepared directly from the pure solid. The solution is stable and gives good results for the titration of  $\text{Fe}^{2+}$ ,  $\text{I}^{-}$ ,  $\text{Cr}_2\text{O}_7^{2-}$ ,  $[\text{Fe}(\text{CN})_6]^{4-}$ ,  $\text{MnO}_4^-$ ,  $\text{Au}^{3+}$  and active chlorine. The end-points of the titrations can be detected visually or potentiometrically.

J. H. WALSH

PM QP

- Y R A J A R O S L A V

*C.Y.* ✓Identification and rapid specific determination of copper in  
ores. Jan Michal and Jaroslav Duda, (Karlovy Univ.,  
Prague). Velká Česká Akademie Nauk, 1960, 10, 31-41-43;  
English summary, cf. C.A. 54, 11523c. Jaroslav  
Duda, Ph.D. Thesis, Prague, 1959. Characteristic  
thiourea-sulfide (I) is a specific reagent for Cu with which  
it forms a brown complex. Once 3 mol. equivalents of  
interfering colored ions can be masked by adding 1.5 ml.  
5 ml. of a slightly acidic solution. Dissolve 0.001 g. Cu add  
50 ml. 90% EtOH and 3 ml. of a 0.1M soln. of I in 98%  
EtOH. Make up to 80 ml. and measure the intensity of the  
color developed after .5 min. in a 1 cm cell at 425 m<sup>μ</sup>. If used in a spectrophotometer  
with a blue filter 425 B. If used in a colorimeter, the cuvet  
should contain 100.5 °Cm. *principia*

*27.1.1*

*C. L. H.*

Hydrazine sulfate as a volumetric reagent. Hydrazine sulfate for the determination of active chlorine. J. Vlastimil and J. ZYKA, Karlova Univerzita, Prague, Chem. Listy 57, 707-710 (1963). (C. A. 59, 14422) To determine Cl<sub>2</sub> activity the sample should contain 5-10% HCl in a total vol. of 1 l. "Dissolve with 0.1M NaOH, H<sub>2</sub>O<sub>2</sub>, and a potassium ferricyanide solution containing 0.01M K<sub>3</sub>[Fe(CN)<sub>6</sub>]. The color reaction is observed after 10 min." The procedure is based on the reduction of Cr<sup>6+</sup> to Cr<sup>3+</sup> by Cl<sub>2</sub> added to the acidic solution (0.4-6.0%). The color of the complex formed is measured at 540 m $\mu$ .

2 YK 1/2.

Czechoslovakia/Analytical Chemistry - Analysis of Inorganic Substances, 0-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1249

Author: Marxova, I., and Zukova

Institution: None *Inst. Anal. Chem., Charles Univ.*

Title: Hydrazine Sulfate as a Reagent in Volumetric Analysis (Hydrazinometry).  
VI. A New Volumetric Determination of Nitrates Applicable to the  
Control of Medicinal Compounds

Original Periodical: Ceskosl. farnac., 1956, Vol 5, No 4, 218-221 (published in Czech with  
summaries in German, English, and Russian)

Abstract: The determination of nitrates is based on the reaction  $N_2H_4 + 2HNO_3 \rightleftharpoons N_2 + N_2O + 3H_2O$  which proceeds quantitatively in acid solution (5-10% HCl). Three to 5 ml of 0.005 M hydrazine sulfate solution are diluted to ~30 ml with ~10% hydrochloric acid and titrated potentiometrically with ~0.01 M solution of the nitrite to be determined. At the equivalent point a considerable variation in potential is observed (~200 mv). It is thus possible to make a quick determination

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Card 1/2

Czechoslovakia/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1249

Abstract: of NaNO<sub>2</sub> in the presence of KBr, theophylline, theobromine, caffeine, barbital, phenobarbital, sodium salicylate, sodium benzoate, papaverine hydrochloride, and belladonna extract. For Communication V see Referat Zhur - Khimiya, 1956, 19585.

Card 2/2

Zyka, Jaroslav

CZECHOSLOVAKIA/ Analytical Chemistry. Analysis of Organic G-3  
Substances.

Abs Jour: Referat. Zhur.-Khimiya, No. 8, 1957, 27280

Author : Karel Habersberger, Jaroslav Zyka.

Title : Oscillo-Polarographic Study of some Alkaloids.

Orig Pub: Ceskosl. farmac., 1956, 5, No. 5, 264 - 271

Abstract: Alkaloids (I) containing tropan or piperidine rings (hydrochlorides - cocaine, tropacocaine, pseudopelletierine, lobeline; sulfates - atropine, apoatropine, pelletierine, and bromides - homotropine and coniline) were studied oscillo-polarographically. The measurements were carried out in acid, neutral, alkaline and buffer solutions. All the studied I showed characteristic oscillo-polarographical teeth, the shape of which changed at the transition from an

Card 1/2

ZYKA JAROSLAV

CZECHOSLOVAKIA/Analytical Chemistry - Analysis of Inorganic  
Substances

G-2

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4781  
Author : Dolezal Jan, Simon Vladimir, Zyka Jaroslav  
Title : Micro-Determination of Cyanides in Bitter Almonds  
Water by Visual Titration.  
Orig Pub : Ceskosl. farmac., 1956, 5, No 6, 339-340

Abstract : The method is based on the formation of a relatively stable cyanide complex in ammoniacal medium. 1-5 ml bitter almond water are diluted with water to 25 ml. 1 ml of ammonia and murexide are added and the red-violet solution is titrated with 0.01 M solution of  $\text{NiSO}_4$ . Just before reaching the end point the solution is orange-red and on addition of one more drop of the titrating solution the color changes to yellow. The method yields accurate results.

*Inst. Anal. Chem, Charles Univ.*

Card 1/1

- 33 -

Zyka, J.

CZECHOSLOVAKIA/Analytical Chemistry - General Questions

G-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4652

Author : Simon, V., Zyka, J.

Inst :

Title : Hydroquinone as a New Reductometric Reagent

Orig Pub : Sb. chekhol. khim. rabot, 1956, 21, No 2, 327-338

Abstract : See RZhKhim, 1956, 58338.

Card 1/1

- 6 -

Zyka, J.

Titration of  $\text{As}^{(III)}$  salts with hydrogen peroxide.  
Vulcan and Chem. & Ind. (London) 1955, p. 311. Analyst Chem.  
July 30, 311-T2 (1955).—Sb salts are detd. in a strongly  
acid HCl soln by potentiometric titration with 0.1M soln  
of  $\text{H}_2\text{O}_2$  in a N atm. Excessive diln of the soln and  
lowering the HCl concn. must be avoided.  $\text{Sb}^{(III)}$  does  
not interfere, but even small amt. of  $\text{As}^{(III)}$  do interfere.  
 $\text{As}^{(III)}$  and  $\text{Sb}^{(III)}$  compds. cannot be detd. in this way.  
J. T. Frischknecht

PM

HORAK, P.; ZYKA, J.

Indirect photometric determination of alkaloids after prior chromatographic separation. IV. Chromatographic separation of tropane alkaloids. Cesk. farm. 12 no. 8:394-398 1963.

1. Vyzkumny ustav prirodnicich leciv, Praha, Katedra analyticky chemie Karlovy university, Praha.

ZYKA, J.

CZECHOSLOVAKIA/Analysis of Inorganic Substances

G-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19600

Author : A. Berka, J. Zyka.

Inst :

Title : Potentiometric Microtitration of Iridium with  
Hydroquinone and Other Reducing Compounds.

Orig Pub: Chem. Listy, 1956, 50, No 5, 829 - 831.

Abstract: On the basis of information obtained during the study of hydroquinone (I) and other reducing agents (n-methyl phenol, n-phenyldiamine, n-amine-phenol), a sensitive and selective method of volumetric determination of little amounts of Ir ( $4+$ ) in presence of a great excess of Pt ( $4+$ ), Rh ( $3+$ ) and Pd ( $2+$ ) salts was developed. This method was

Card 1/3

- 77 -

Zyka, J.

## CZECHOSLOVAKIA/ Analytical Chemistry - Analysis of Organic Substances

G-3

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12174

Author : Berka A., Zyka J.

Title : Indirect Titrimetric Determination of the Carbonyl Group

Orig Pub : Chem. listy, 1956, 50, No 5, 831-833

Abstract : The method consists in determining the excess of precipitant, 2,4-dinitro-phenylhydrazine (I), by titration with 0.01 M solution of chloramine T (II) in the presence of KBr. The aldehyde or ketone under study (2-10 mg) is dissolved in 96% alcohol and precipitated with 5-10 ml of 0.01 M solution of I. After 12 hours the precipitate is filtered off (paper filter "Blue Band") and washed with 20 ml 2 N HCl. Filtrate is diluted to twice its volume, 1-2 g KBr are added and unreacted I is titrated by the potentiometric procedure with a titrated solution of II. Potential of the inflection point of the titration curve

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## CZECHOSLOVAKIA/ Analytical Chemistry - Analysis of Organic Substances

G-3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002065810003-6  
Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12174

is at 500 mv; change in potential at the terminal point amounts to ~ 250 mv with 0.05 ml II. It was ascertained that 1 mole I interacts with 2 moles of II but the reaction mechanism has not been studied. In determination of < 1 mg 0.001 M solutions of both reagents are used. Examples of determinations are described. Errors of the described method do not exceed the usual analytical limits, but with samples < 1 mg the results are usually too high.

Card 2/2

CZECHOSLOVAKIA/Analytical Chemistry - Analysis of Organic  
Substances.

E-3

Abs Jour : Ref Zhur - Khimiya, No 2, 1959, 4373

Author : Berka, A., Zyka, J.

Inst :

Title : Volumetric Methods for the Analysis of Organic Substances.  
IV. Application of the N-Bromosuccinimide Addition  
Reaction.

Orig Pub : Ceskoslov Farmac. 6, No 4, 212-215 (1957) (in Czech with  
summaries in German, English, and Russian)

Abstract : A volumetric method is proposed for the determination of a  
number of organic compounds containing the allyl group by  
titration (visually, in the presence of methyl red until  
the latter is discolored, and potentiometrically) with a  
~0.01 M solution of N-bromosuccinimide, leading to the bro-  
mination of unsaturated compounds. The titer of the N-  
bromosuccinimide solution is determined against arsenite.

Card 1/2

CZECHOSLOVAKIA / Analytical Chemistry. Analysis of  
Inorganic Substances.

E-2

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57163.

Author : V. - Krejzova E., Simon V., Zyka J.  
VI. - Mras L., Simon V., Zyka J.

Inst : Not given.

Title : Titration with Hydroquinon and Similar Reducing Agents. V. - Determination of Cerium in Pharmaceutical Preparations. VI. - Utilization of the Exchange Reaction of Tetravalent Cerium with the Salts of Divalent Manganese.

Orig Pub: V -Ceskosl. farmac., 1957, 6, No 8, 438-440.  
VI-Chem. listy, 1957, 51, No 10, 1826-1831.

Abstract: V. - A new method for determining Ce in the

Card 1/6

CZECHOSLOVAKIA / Analytical Chemistry. Analysis of Inorganic Substances.

E-2

Abs Jour: Ref Zhur-Khimija, 1958, No 17, 57163.

Abstract: the true Ce content of a sample, whereas the weight determines content of other lanthanides. Presence of La and Y in certain "Khemotser" preparations is established by means of spectographic analyses. The described methods are considered suitable for control purposes.

VI. - A method for the selective determination of  $\text{Ce}^{4+}$  in the presence of strong oxidizing agents ( $\text{Cr}_2\text{O}_7^{2-}$ , in particular), has been developed. It is based on the  $2 \text{Ce}^{4+} + \text{Mn}^{2+} + 2\text{H}_2\text{O} = 2 \text{Ce}^{3+} + \text{MnO}_2 + 4\text{H}^+$ . An analysed solution that contains,

Card 3/6

CZECHOSLOVAKIA / Analytical Chemistry. Analysis of Inorganic Substances.

E-2

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57163.

Abstract: residue is conducted either by an indirect or by a direct reductometrical titration with I solution, or by the complexometrical titration method. In the former case, the residue is dissolved in 4 n  $H_2SO_4$  that contains an excess of 0.1 n solution of I. The  $H_2SO_4$  concentration is increased to a level of approx. 2 n, and the excess of I is backtitrated with 0.1 n  $Ce(SO_4)_2$  solution, while resorting to either potentiometrical visual observation of an end point obtained with ferrion indicator. The direct potentiometrical titration of Mn(4+) with I

Card 5/6

BERKA,A.; PROCHAZKOVA,V.; ZYKA,J.

New volumetric methods in the analysis of organic substances.  
Vii. Titration of some phenothiazine derivatives by lead  
tetraacetate. Cesk. farm. 13 no.3:121-122 Mr. '64.

1. Katedra analytische chemie KU, Praha.

ZYKA, J.

Czechoslovakia / Analytical Chemistry.  
Analysis of Inorganic Substances.

E-2

Abs Jour: Ref. Zhur - Khimiya No. 2, 1958, 4276

Author : Michal J., Zyka J.

Title : Tetraethylthiuram Disulfide As An Analytical Reagent. IV. The Photometric Determination of Mercury and Silver.

Orig Pub: Chem. Listy., 1957, 51, No. 1, 56-62

Abstract: An indirect photometric method for the determination of mercury and silver is described. The method is based on a decrease in color intensity of the colored internally complexed compound of  $\text{Cu}^{2+}$  with tetraethylthiuram disulfide (1) as a result of the exchange reaction with  $\text{Hg}^{2+}$  and  $\text{Ag}^+$ . The complex of  $\text{Cu}^{2+}$  with (1) was named mercural (II) by the authors. It is obtained in a

Card 1/3

Inov. Anal Chem, Charles Univ

Czechoslovakia / Analytical Chemistry.  
Analysis of Inorganic Substances.

E-2

Abs Jour: Ref. Zhur - Khimiya No. 2, 1958, 4276

only by  $\text{HNO}_3$  and  $\text{Ce}^{4+}$  and large amounts of Sb and Bi. In the presence of  $\text{Cu}^{2+}$  the solution (11) has to be free from uncombined (1). Silver is determined similarly; discoloration of solution (11) occurs faster than in the Hg determination. See report 3 RzhKhim, 1955, 26 396.

Card 3/3

ZYKA, JAROSLAV

CZECHOSLOVAKIA/Analytic Chemistry - Analysis of Inorganic  
Substances

E-2

Abs Jour : Ref Zhur - Khimiya, No 10, 1958, 32162

Author : Jan Dolezal, Vladimir Simon, Jaroslav Zyka

Inst : -

Title : Titration with Potassium Cyanide Solution.

Orig Pub : Chem. listy, 1957, 51, No 5, 880-883: Sb. chekhol. khim. rabot, 1957, 22, No 6, 1805-1808

Abstract : The complexometric titration of  $\text{Cu}^{2+}$  and  $\text{Ni}^{2+}$  with 0.1 to 0.01 M KCN solution in  $\text{NH}_4\text{OH}$  medium with the use of murexide as an indicator is described.  $\text{Ni}^{2+}$ ,  $\text{Hg}^{2+}$ ,  $\text{Ag}^+$ ,  $\text{Au}^+$  and  $\text{Pd}^{2+}$  are determined even in very low concentrations by an indirect method - by the titration of the excessive KCN with 0.1 to 0.01 M  $\text{NiSO}_4$  solution in the presence of the same indicator. This titration method is very accurate and it is suitable also to the determination of cyanides. The direct Ni determination in

Card 1/2

CZECHOSLOVAKIA / Analytical Chemistry. Analysis of E-2  
Inorganic Substances.

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57214.

Author : Krejzova E., Simon V., Zyka J.

Inst : Not given.

Title : Titration with Hydroquinon and Similar Reducing Agents. IV. Determination of Azides of the Exchange Precipitation Reaction.

Orig Pub: Chem. listy, 1957, 51, No 9, 1764-1766.

Abstract: A method of determining small quantities of azide (A) based on the exchange between A and  $\text{Ag}_2\text{CrO}_4$  is described. Since  $\text{AgN}_3$  is less soluble than  $\text{Ag}_2\text{CrO}_4$ , when a suspension of  $\text{Ag}_2\text{CrO}_4$  is added to an

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CZECHOSLOVAKIA / Analytical Chemistry. Analysis of Inorganic Substances.

E-2

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57214.

**Abstract:** A solution, the following reaction takes place:  
 $2 \text{NaN}_3 + \text{Ag}_2\text{CrO}_4 = 2\text{AgN}_3 + \text{Na}_2\text{CrO}_4$ . An equivalent A quantity in the filtrate is determined from  $\text{CrO}_4^-$ , by titration with the solution of hydroquinon (I). Due to a lower  $\text{NaN}_3$  equivalent (1cc of 0.1 n I corresponding to 4.33 mg  $\text{NaN}_3$ ) this method is more sensitive than that involving the direct titration of A with  $\text{AgNO}_3$  solution (1cc of 0.1 n  $\text{AgNO}_3$  corresponds to 6.50 mg  $\text{NaN}_3$ ). In determining A, the analyzed samples, containing approx. 3-60 mg  $\text{NaN}_3$ , are dissolved in a small volume of water followed by the addition of approx. 12 gr of pure  $\text{Ag}_2\text{CrO}_4$ , and of 1 drop of 2%  $\text{KNO}_3$  solution, by the dilution with water to 50cc volume and by the filtration. 25cc of the obtained filtrate is

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CZECHOSLOVAKIA / Analytical Chemistry. Analysis of  
Inorganic Substances;

E-2

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57214.

**Abstract:** then acidified with 20%  $H_2SO_4$  (20cc) and titrated (with the use of either potentiometric or visual methods) with 0.1 n I solution and using diphenylamine as indicator. The above method is also suitable for the determining of  $Cl^-$ ,  $Br^-$ , and  $I^-$ . Principle of this method is also applicable to the  $SO_4^{2-}$ -determination. In this instance suspension of  $BaCrO_4$  is being employed (Ref Zhur-Khimiya, 1957, 8534). In order to obtain quantitative exchange involved in the latter reaction, the reactants are acidified with hydrochloric acid up to approx. 0.1 M concentration, heated for about 10 minutes on a steam bath, neutralized with  $NH_3$  while hot, kept

Card 3/4

- CZECHOSLOVAKIA / Analytical Chemistry. Analysis of Inorganic Substances. E-2

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57214.

Abstract: for 8-10 hours and then subjected to the analysis steps similar to those used in the determination of A. For Part III refer to Ref Zhur.-Khimiya, 1957, 19600.

Card 4/4

29

CZECHOSLOVAKIA/Chemical Technology. Pharmaceuticals.  
Vitamins. Antibiotics.

H

Abs Jour: Ref Zhur-Khin., No 24, 1958, 82711.

Author : Krejzova E., Simon V., Zykna J.

Inst :

Title : The Oxidimetric Determination of Tartaric Acid and  
its Salts.

Orig Pub: Ceskosl. farmac., 1958, 7, No 2, 82-83.

Abstract: The indirect oxidimetric determination of tartaric acid and some of its salts with  $K_2Cr_2O_7$  and with salts of  $Ce^{4+}$  was investigated. The best results were obtained with  $K_2Cr_2O_7$ . The conditions were found under which the method can be used for volumetric determination. The excess of the reagent

Card : 1/2

ZYKA, J.

CZECHOSLOVAKIA/Analytical Chemistry - Organic Analysis.

E

Abs Jour : Ref Zhur Khimiya, No 20, 1959, 71274

Author : Berka, Antonin; Zyka, Jaroslav

Inst Title : Volumetric Methods of Analysis of Organic Substances.  
V. Oxidation of Tartaric Acid with Potassium Perio-  
date and Lead Tetraacetate

Orig Pub : Ceskosl. farma., 1958, 7, No 3, 141-143

Abstract : The method of quantitative determination of tartaric acid (I) based on its oxidation by  $\text{KIO}_4$  (II) in the acetate buffer solution at pH of 4.8 according to the equation  $\text{C}_4\text{H}_6\text{O}_6 + 3\text{KIO}_4 = 2\text{HCOOH} + 2\text{CO}_2 + 3\text{KIO}_3 + 2\text{H}_2\text{O}$  has been worked out. To 5 ml of solution (~ 3 mg I) 1 ml glacial  $\text{CH}_3\text{COOH}$ , 2 ml 30% KOH solution, and 10 ml 0.01 M solution of II are added. After 4 hours 4 ml concentrated  $\text{H}_2\text{SO}_4$  is added while cooling and excess of II is titrated potentiometrically with

Card 1/2

Khimiya, No 20, 1959, 71274

E

0.01 M  $\text{FeSO}_4$  solution. 1 ml of solution of II corresponds to 0.32% mg of I. Average relative (III) at pH of 4.8 takes place in an analogous way ( $\text{C}_4\text{H}_6\text{O}_6 + 3(\text{CH}_3\text{COO})_4\text{Pb} + 2\text{H}_2\text{O} = 2\text{CO}_2 + 2\text{HCOOH} + 3(\text{CH}_3\text{COO})_2\text{Pb} + 6\text{CH}_3\text{COOH}$ ); however, III is capable of oxidizing the HCOOH formed and cannot be used for the quantitative determination of I.

N. Turkevich  
Communication IV see RZKhin, No 2, 1959, 4373.

Card 2/2

Country : CZECHOSLOVAKIA  
Category : Analytical Chemistry. Analysis of Organic  
Substances  
Abs. Jour : Ref Zhur - Khim., No 5, 1959, No. 15144  
Author : Kracmar, J.; Zyka, J.  
Institut. :  
Title : Polarimetric Titration of Organic Bases. VI.  
The Use of a Nitranilic Acid Solution as a  
Volumetric Reagent  
Orig. Pub. : Ceskosl. farmac., 1958, 7, No 5, 246-249  
Abstract : Polarimetric and gravimetric methods were developed for the determination of salts of organic bases by means of their precipitation with nitranilic acid (NA) (3,6-dinitro-2,5-dioxybenzoquinone-1,4) (Ref Zhur-Khim, 1957, 71577). 100-200 mg. of a solution are dissolved in 10-20 ml. of 0.01 N. KCl solution and titrated with a 0.1 M solution of NA with an applied voltage of 0.5 v., using a type V 301 Geiger polarograph with a 4-volt accumu-

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1/4

3 - 37

Country	: CZECHOSLOVAKIA
Category	: Analytical Chemistry, Analysis of Organic Substances
Abs. Jour	: Ref Zaur - Khim., No 5, 1959, No. 15144.
Author	:
Institut.	:
Title	:
Orig. Pub.	:
Abstract Cont'd	: -10%. In gravimetric determination, 10 ml. of 3.5% solution of NA, and then 5 ml. of alcohol are added drop by drop during mixing to a solution of 100-200 mg. of substance in 10 ml. of water. During three hours of standing in a refrigerator, the precipitate is filtered off in a G3 or G4 crucible and washed three times in 5 ml. of alcohol (temperature 10°) and 10 ml. of ether. It is dried at 100-110° for two hours and weighed. One mole of NA binds two
Card:	3/4
E - 38	

ZYKA, J

Direct oxidimetric estimations of manganese. Jan Doležal and Jaroslav Zýka (Karlov Univ., Prague) *Chemie (Prague)* 10, 305-7 (1968).—Direct titration methods for bivalent Mn are compared. They can be classified according to whether Mn is oxidized to the trivalent or quadrivalent stage. From the former group, the common Volhard and Wolff method ( $KMnO_4$ ) titration in the presence of  $ZnO$  in a slightly acid medium lacks reproducibility even under rigidly standardized conditions. Tomíček's ferricyanide method in the modification of Dickens and Maassen (*C.A.* 30, 4110) has the advantage of rapidity and accuracy, but Co must be absent. Lingane's and Karplus' (*C.A.* 40, 2411) permanganate titration in neutral pyrophosphate soln. can be recommended. The following modification is given for the estn. in concentrates contg. 5-20% Mn. Weigh a sample (about 0.6 g.), boil with 30 ml. concd.  $HNO_3$  and 10 ml. concd. HCl, evap. with 6 ml. concd.  $H_2SO_4$ , and make the residue to 100 ml. with  $H_2O$ . To a 25-ml. aliquot is added several drops of 30%  $H_2O_2$ , the soln. boiled, sautéed with Na pyrophosphate, made to pH 7 with HCl and KOH, and titrated potentiometrically (Pt-W electrodes) with 0.025*M*  $KMnO_4$ .

I. M. Hals-

GDR / Analytical Chemistry. Analysis of Inorganic  
Substances.

E-2

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 932.

Author : Uraz, L., Simon, V., Zyka, J.

Inst : Not given.

Title : Titration With Hydroquinone and With a Similar  
Reducer. VI. The Utilization of the Reaction  
of Four Valent Cerium With the Salts of Di-valent  
Manganese.

Orig Pub: Collect, Czechosl. chem. commun., 1958, 23,  
No 6, 1061-1065.

Abstract: See R. Zh. Khim., 1958, 57163.

Card 1/1

ZYKA, J.; BERKA, A.

"Oxidation of some ox-hydroxy acids and mannitol with lead (IV) acetate and potassium periodate." (In German).

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS., Praha, Czechoslovakia,  
Vol. 23, no. 11, Nov. 1958.

MONTHLY LIST of EAST EUROPEAN ACCESSIONS (EEAI), LC, Vol. 8, No. 7, July 1959, Unclass.

Zyka, Jaroslav

CZECHOSLOVAKIA/Analytical Chemistry. Analysis of Organic  
Substances.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 31105.

Author : Berka, Antonin, Zyka, Jaroslav.

Inst :

Title : Titration with Lead Tetra-Acetate.

Orig Pub: Chem. listy, 1958, 52, No 5, 926-929.

Abstract: The oxidizing titration with  $\text{Pb}(\text{CH}_3\text{COO})_4$  solution (I) in glacial  $\text{CH}_3\text{COOH}$  (II) for which a waterless II medium is recommended and which is hindered by the slow rate of oxidation of the substance being determined, can in many cases be carried out quicker in the presence of water in a diluted II medium or in aqueous solutions acidified with mineral acids by

Card : 1/3

CZECHOSLOVAKIA/Analytical Chemistry. Analysis of Organic  
Substances.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 31105.

using potentiometric titration. The 0.05 M solution of I in the glacial II is prepared by dissolving about 50 g of powdered  $Pb_3O_4$  in one liter of glacial II at 55-65° and by filtering the hot solution. The titer of the solution is determined by potentiometric titration of hydroquinone. The presence of  $Pb^{2+}$  salt does not hinder the process. The titer of the solution is stable for 2 months. Quantitative determination of hydrazine (III) and of its derivatives (phenylhydrazine, semicarbazide, n-nitrophenylhydrazine and others) and determination of ascorbic acid (IV) was carried out by means of the described method. The titration of IV is carried out in 50% II adding for each 20 ml of the solution about 2 g of solid  $CH_3COOK$  in the presence of

Card : 2/3

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Zyka, Jaroslav

CZECHOSLOVAKIA/Analytical Chemistry. Analysis of Organic  
Substances.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 31101.

Author : Berka, Antonín, Zyka, Jaroslav

Inst :

Title : Oxidation of Certain  $\alpha$ -Oxycarboxylic Acids and of Mannite with  
Lead Acetate and with Potassium Periodate.

Orng Pub: Chem. listy, 1958, 52, No 5, 930-935.

Abstract: In the study of the oxidation processes of tartaric acid (I), amygdalic acid (II), of mannite (III) and of Ca gluconate (IV) with  $Pb(CH_3COO)_4$  (V) or with  $K_2Cr_2O_7$  (VI), direct potentiometric titration of I-IV with 0.05 M V solution in glacial  $CH_3COOH$  (VII), and the indirect determination of excess V or VI were utilized. Surplus V was titrated potentiometrically.

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CZECHOSLOVAKIA/Analytical Chemistry, Analysis of Organic Substances.

Abs Jour: Ref Zhur-Khim., No 9, 1959, 31101.

cally with 0.05 M Hydroquinone solution. The determination of excess VI is based on its reduction to  $K_2O_3$  with 0.02 normal  $FeSO_4$  solution and titration of the evolved  $Fe^{2+}$  with 0.05 M solution of VI in the presence of a diphenylamine indicator. The optimum pH value of the solutions undergoing titration is 4.8. Therefore titration was carried out in the acetate buffer medium. Under these conditions V proved to be a stronger oxidizing agent than VI. Only V can be used for the oxidation of II. However, in most cases V is too strong an oxidizing agent, producing secondary oxidation of the primary products of the reaction ( $HC_2O$ ,  $HCOOH$ ), which leads to irreproducible results. For the analysis of K, III and IV

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Country	: Czechoslovakia	E-2
Category	: Analytical Chemistry - Analysis of Inorganic Substances	
Abs. Jour.	: Ref Zhur-Khimiya, No 6, 1959	19105
Author	: Krejzova, E.; Simon, V.; Zyka, J.	
Institut.		
Title	: Titration with Hydroquinone and Similar Reducing Agents. VIII. Potentiometric Determination of 3-Valent Thallium Salt.	
Orig Pub.	: Chem. listy, 1958, 52, No 5, 936-938	

Abstract : Hydroquinone is used as a reducing agent in potentiometric determination of  $Tl^{3+}$ . Oxidation of  $Tl^+$  prior to analysis can be effected with  $(NH_4)_2S_2O_8$  in acid medium; Br-water usually utilized for this purpose, is not suitable. The solution to be titrated must contain 5-20% by weight of  $H_2SO_4$  and 3-30 mg Tl, and its maximum volume should be 30 ml. On determination of Tl, approximately 20% solution of  $H_2SO_4$  is added to the solution being analyzed, in a 50 ml beaker, diluted to about 20 ml, added about 0.5 g solid  $(NH_4)_2S_2O_8$ , heated gently for 15-20 minutes (final volume of the solution should be about 15 ml), and after cooling it is potentiometrically titrated with 0.01 N solution of hydroquinone.

Card: 1/3

Country	:	Czechoslovakia	E-2
Category	:	Analytical Chemistry - Analysis of Inorganic Substances	
Abs. Jour.	:	Ref Zhur-Khimya; No 6, 1959	19105
Author	:		
Institut.	:		
Title	:		
Orig. Pub.	:		
Abstract : The inflection point is at about 500 mv (relative to saturated calomel electrode); change in potential at equivalence point is well defined (angle coefficient about 1500). Determination of Tl is not interfered with by the presence of Cu <sup>2+</sup> , Pb <sup>2+</sup> , Ag <sup>+</sup> , Bi <sup>3+</sup> , Co <sup>2+</sup> , Zn <sup>2+</sup> , Al <sup>3+</sup> , Mg <sup>2+</sup> , As <sup>5+</sup> , MoO <sub>4</sub> <sup>2-</sup> and WO <sub>4</sub> <sup>2-</sup> , even when they are present in 10-fold excess; also no interference results from the presence of considerable amounts of PO <sub>4</sub> <sup>3-</sup> , NO <sub>3</sub> <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup> , and Cl <sup>-</sup> (up to a concentration of about 0.01 N). The presence of Fe <sup>3+</sup> , Sn <sup>4+</sup> , Sb(5+), Hg <sup>2+</sup> , Ce <sup>4+</sup> , Cr <sub>2</sub> O <sub>7</sub> <sup>2-</sup> , MnO <sub>4</sub> <sup>-</sup> , interferes, as does the presence of even small amounts of Br <sup>-</sup> and I <sup>-</sup> . For reasons			
Card: 2/3			

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Country	: Czechoslovakia	E-2
Category	: Analytical Chemistry - Analysis of Inorganic Substances	
Abs. Jour.	: Ref Zhur-Khimdy, No 6, 1959	19077
Author	: Krejzova, E.; Simon, V.; <u>Zyka, J.</u>	
Institut.	:	
Title	: Titration with Hydroquinone and Similar Reducing Agents.VII. Determination of Higher Oxides of Manganese and Lead.	
Orig. Pub.	: Chem. listy, 1958, 52, No 5, 976-978	

Abstract : A titrimetric method was developed for determination of  $MnO_2$ ,  $Mn_2O_3$  and  $PbO_2$ , which is based on their reduction with hydroquinone (I) and subsequent titration of excess I with  $Ce(SO_4)_2$ , using ferroin as indicator. To the finely comminuted sample (about 60 mg  $PbO_2$ , or 45 mg  $MnO_2$ , or 40 mg  $Mn_2O_3$ ) are added, in a titration flask with a ground glass stopper, 10-20 ml 0.1 N solution of I and about 10 ml 2 N  $H_2SO_4$  (10 ml of 5%  $CH_3COOH$  in the case of  $PbO_2$ ), the mixture is shaken with glass beads (5 to 10) for 5-10 minutes until the sample is completely dissolved, ferroin is added and titration with 0.1 N solution  $Ce(SO_4)_2$  is carried out

Card:1/3

E-9

Country	:	Czechoslovakia	E-2
Category	:	Analytical Chemistry - Analysis of	
Abs. Jour.	:	Inorganic Substances Ref Zhur-Khimiya, No 6, 1959	19077

Author :  
Institut. :  
Title :

Orig Pub. :

Abstract : until the color of the solution changes from red to brilliant-blue or green. In determinations of oxides of Mn the back-titration of I can be effected with  $K_2Cr_2O_7$ , using diphenylamine as indicator, however the titration with  $Ce(SO_4)_2$  is more sensitive.  $Fe^{3+}$  and  $Cu^{2+}$  need not be removed or masked, since they do not react with I. By the described procedure active O is determined in the sample; the total metal content can be determined by complexometry after reduction of the higher oxides. To do this, there are added to the sample in the titration flask, an excess of  $NH_2OH \cdot H_2SO_4$  solution and 0.1 M solution of Complexon III,

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Zyka, Jaroslav

CZECHOSLOVAKIA / Analytical Chemistry, General Topics.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30926.

Author : Mráz, Ladislav, Simon, Vladimír, Zyka, Jaroslav.

Inst :

Title : Titration with Hydroquinone and Similar Reducing Agents. IX. On the Stability of Hydroquinone Solutions.

Orig Pub: Chem. listy, 1958, 52, No 6, 1083-1088.

Abstract: The effect of various factors on the stability of hydroquinone solutions (I) was studied by means of systematic control of the titer of 0.1-0.001 normal solutions of I by visual, photometric or potentiometric titration with  $K_2Cr_2O_7$  solution or with  $Ce(SO_4)_2$  solution (in the case of highly di-

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CZECHOSLOVAKIA/Analytical Chemistry. General Topics.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30926.

luted solutions of I), and also by means of photometric measurement of the intensity of the brownish-red color which formed in the presence of the disassociation of I. It was established that the I solutions acidified with 1-3%  $H_2SO_4$  are the most stable ones. The titer of these solutions does not begin to change until 3-4 months after their preparation. When boiled these solutions retain their stability for at least 1 hour. Neutral solutions of I have a somewhat lesser stability, but even in this case changes were observed only after 2-3 months. The concentration of I has practically no effect either on the acid or on the neutral solutions of I. The I solutions alkalinized with the addition

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CZECHOSLOVAKIA/Analytical Chemistry. General Topics.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30926.

of  $\text{KHCO}_3$  (0.1 normal) quickly become dark brown (close to black) in color and become turbid. Along with this the titer of these solutions diminishes rapidly especially when greatly diluted. When acidified these solutions precipitate an amorphous brownish red sediment which is expressed by the general formula  $\text{C}_6\text{H}_4\text{O}_3$ . The stability of the acidified I solutions is somewhat lowered by the effect of light but does not at all change through the action of the  $\text{O}_2$  in the air. No effect was detected of metal traces, the presence of which is possible in I preparations. With the exception of the purest I preparations, the titer of I solutions (even of the acidified ones) fluctuates somewhat for 1-2 days after their prepa-

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CZECHOSLOVAKIA/Analytical Chemistry. General Topics.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30926.

ration, but at the end of this time the titer becomes completely stabilized. The degree of titer deviation depends on the purity of the utilized I and in the ordinary I preparations fluctuates within 0.5-1.5%. For report VIII, see: Ref Zhur-Khimiya, 1959, 19105. -- Karel Kamen.

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Zyka, Jaroslav

CZECHOSLOVAKIA/Analytical Chemistry. Analysis of Inorganic  
Substances.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30966.

Author : Mraž, Ladislav, Šitton Vladimír, Zyka, Jaroslav.

Inst :

Title : Titration with Hydroquinone and Similar Reducing Agents.  
X. Titration of Cerium, Chromium and Vanadium and the  
Feasibility of Their Determination When Present Simul-  
taneously.

Orig Pub: Chem. listy, 1958, 52, No 6, 1089-1092.

Abstract: A method of accurately determining small quantities  
of Ce, V and of Cr has been developed. This method  
is based on the potentiometric titration of  $\text{Ce}^{4+}$ ,  
 $\text{Cr}_2\text{O}_7^{2-}$  and  $\text{VO}_3^-$  with hydroquinone solution (I)

Card : 1/4

CZECHOSLOVAKIA/Analytical Chemistry. Analysis of Inorganic Substances.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30966.

(in the process of titration the enumerated ions are reduced to Ce<sup>3+</sup>, Cr<sup>3+</sup> and VO<sup>1+</sup> respectively). Ce<sup>4+</sup> and Cr<sub>2</sub>O<sub>7</sub><sup>2-</sup> are very accurately determined close to concentrations  $5 \cdot 10^{-4}$  M and  $2 \cdot 10^{-4}$  M respectively by titration in the 2-15% H<sub>2</sub>SO<sub>4</sub> medium. With greater dilution negative errors are observed. 0.1-0.05 normal solutions of VO<sub>3</sub><sup>2-</sup> can be titrated in the 15-30% H<sub>2</sub>SO<sub>4</sub> medium and 0.05-0.005 normal solutions can be titrated in the 25-30% H<sub>2</sub>SO<sub>4</sub> medium. For the solutions of 0.005 normal VO<sub>3</sub><sup>2-</sup> the results obtained are too high. Instead of H<sub>2</sub>SO<sub>4</sub> HNO<sub>3</sub> (0.2-15 normal) can also be used. The determination of Ce is hindered by the presence of HCl and of large

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CZECHOSLOVAKIA/Analytical Chemistry. Analysis of Inorganic Substances.

E

Abs Jour: Ref Zhur-Khim., No 9, 1959, 30966.

quantities of  $H_2PO_4^-$ , and the determination of V is hindered by the presence of HCl. The titration of all 3 of the above-mentioned ions can be carried out in the presence of  $MnO_4^-$  since the jump in potential corresponding to  $MnO_4^-$  is clearly distinct from the jump in the potentials of the ions being determined. In comparison with the method of titration with  $Fe^{2+}$  solution the hydroquinone method is much more sensitive. From the combinations of Ce, Cr and V it is possible to reliably determine  $VO_3^-$  together with  $Ce^{4+}$  and somewhat less clearly  $Cr_2O_7^{2-}$  with  $Ce^{4+}$ . Simultaneous determination of  $Cr_2O_7^{2-}$  and  $VO_3^-$  is difficult or

Card : 3/4

Titration with hydroquinone and analogous reductants  
for cerium in the presence of lanthanides and actinides.

Zhuk, A. N. et al. // Elektrokhimiya // 1988, v. 24, no. 12, p. 2711-2714.  
(1988), cf. C.A. 112, 15323j, preceding abstr.—Ce was determined in monazite sands (also in the presence of Mn) cerite metal (contg. 30-45% La, Pr, and Nd, 2% V and Fe, and small amounts of Si, Al, Mg, and Ca). Al-Th-Ce-alloy (contg. 6% Ce), steel (contg. 0.01-0.2% Ce), electrolytic magnet materials (contg. 15-20% Ce, Pr, Sm, and Nd), and in other metal by titration with hydroquinone soln. with potentiometric or visual ferron indicator. J.S. Blather

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5 (2), 5 (3)

AUTHORS: Michal, Jan, Zýka, Jaroslav

SOV/75-14-4-6/30

TITLE: The Determination of Small Amounts of Copper in Metals With the Help of Tetraethylthiuram Disulfide

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, pp 422-426 (USSR)

ABSTRACT: Tetraethylthiuram disulfide  $(C_2H_5)_2NC(S) \cdot S \cdot S \cdot (S)CN(C_2H_5)_2$  is a very easily accessible compound, which is used as a pharmaceutical preparation and in the rubber industry. It is difficultly soluble in water and better soluble in organic solvents (e.g. in alcohol). Tetraethylthiuram disulfide forms almost colorless crystals with a melting point of 70°. Its alcoholic solution reacts with copper(II) salts in weakly acid solutions to form an intensely yellow-brown compound. The authors propose the name "Dikupral" for tetraethylthiuram disulfide. The proof of copper with the help of Dikupral is only upset by salts of univalent mercury and by selenites, which are reduced to the element by the reagent. The sensitivity of the proof of copper is as follows:  $pD = 5.70$  on a drop plate;  $pD = 5.0$  in a microscopical test-tube;  $pD = 7.18$  in an extraction with ether;  $pD = 6.48$  on filter paper. Excess amounts of nitric acid and other strong oxidizing agents

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The Determination of Small Amounts of Copper in Metals SOV/75-14-4-6/30  
With the Help of Tetraethylthiuram Disulfide

are upsetting. Silver- and mercury(II) ions form colorless compounds with Dikupral', which are more stable than the corresponding copper complex. In the presence of mercury- and silver ions a surplus of the reagent must be added, therefore, for the proof of copper so that the yellow-brown coloring occurs. On the other hand, Dikupral' can be used for the sensitive selective determination of silver or mercury (Refs 5-7). The absorption maximum of the solutions of the copper complex with Dikupral' appears at 435 m $\mu$ . The authors worked out the optimum conditions of a quantitative photometric determination of copper with the help of Dikupral'. At the same time, the influence exercised by a great excess of various metal ions on the photometric determination was investigated. It turned out that in many cases the determination of copper in pure metals with contents of only 0.01 % of Cu is possible without separation. The elaboration of optimum conditions for the determination of copper is described in detail. Specifications for the quantitative determination of small amounts of copper in the metals zinc, aluminum, mercury, tungsten, tin, manganese and antimony and also arsenic are given in the paper. The constancy of the coloring of the

Card 2/3

The Determination of Small Amounts of Copper in Metals SOV/75-14-4-6/30  
With the Help of Tetraethylthiuram Disulfide

compound of copper with Dikupral' in the following media is shown in a table: 0.01 N - 8 N H<sub>2</sub>SO<sub>4</sub>; 0.001 N - 4 N HCl; 0.01 N - 4 N HClO<sub>4</sub>; 1 N - 6 N H<sub>3</sub>PO<sub>4</sub>; 0.05 N, and 0.08 N HNO<sub>3</sub>; 5% oxalic acid; 5% tartaric acid. There are 4 figures, 1 table, and 12 references.

ASSOCIATION: Scientific Research Institute of Ores, Charles University, Prague (CSR)

SUBMITTED: September 20, 1958

Card 3/3

ZYKA, J.; BERKA, A.

"Titration with lead (IV) acetates" In German. p. 105.

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech.,  
Vol. 24, No. 1, Jan. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 6, Sept. 59  
Unclassified.

ZYKA, J.; KREJZHOVA, E.; SIMON, V.;

"Titration with hydroquinone and analogous reducing agents." VII. Determination  
of the higher oxides of manganese and lead. In German. p. 293.

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech.,  
Vol 24, No. 1, Jan. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 6, Sept. 59  
Unclassified

COUNTRY : Czechoslovakia  
CATEGORY :  
ABS. JOUR. : RZhKhim., No. 22 1959, No. 78257  
AUTHOR : Krajnova, E., Simon, V., and Zyka, J.; Mraz, L.  
INSTIT. : Not given  
TITLE : Titrations with Hydroquinone and Similar Reducing Agents. VIII. The Potentiometric Determination of Salts of Trivalent Thallium. IX. On the <sup>\*\*</sup> Collection Czechoslov Chem Commun, 24, No 2, 448-451; No 4, 1054-1060 (1959)  
ORIG. PUB. : See RZhKhim, 1959, No 6, 19105. For Communication VII see RZhKhim, 1959, No 15, 55103.  
ABSTRACT :

CARD: 1/1

<sup>\*</sup>Simon, V., and Zyka, J.<sup>\*\*</sup>Stability of Hydroquinone Solutions.

DOLEZAL, J.; DRAHONOVSKY, J.; ZYKA, J.

Use of metal reducers and amalgams in chemical analysis. I. Silver  
reducer. In German. Coll.Oz.Chem. 24 no.11:3649-3653 N '59.

1. Institut fur analytische Chemie, Karluniversitat, Prag.  
(Reduction) (Analysis (Chemistry)) (Silver) (Amalgams)

(HEAI 9:5)

DOLEZAL, J.; MOLDAN, B.; ZYKA, J.

Use of metal reducers and amalgams in chemical analysis. II. Redox  
effect of molybdenum. In German. Coll.Cz.Chem. 24 no.11:3769-3776  
N '59. (EHAI 9:5)

1. Institut fur analytische Chemie, Karlsuniversitat, Prag.  
(Molybdenum) (Chemistry, Analytic) (Amalgams) (Reduction)

Distr.: 4/20

12 Use of emulsions in chemical analysis. Jan Dolezal,  
Bedrich Moldan, and Jaroslav Zelka (Karlove Univ.,  
Prague). Chem. Listy 53, 173-176 (1959). Abstracts  
Zn, Cd, Cu, Pb, and BiO art used for the detn. of Be, Ti, V,  
U, W, Mo, Cr, Sn, Cu, Ni, Re, PO<sub>4</sub>, ClO<sub>4</sub>, BrO<sub>3</sub>,  
SO<sub>4</sub>, ClO<sub>3</sub>, SO<sub>3</sub>, F, KClN. 81 references.  
M. Hudeciky.

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ZYKA, J.

E 009/60/000/07/003/046  
E112/E453

AUTHORS:

Jarmila Práchenská and Jaroslav Zýka

TITLE:

Identification and Spectrophotometric Determination  
of Hydrazine and its Derivatives by Means of Vanillin

PERIODICAL:

Chemicky Průmysl, 1960, Nr 7, pp 343-346

ABSTRACT:

Many of the spectrophotometric methods for the determination of small quantities of hydrazine are based on its reaction with aromatic aldehydes, forming aldazines of intense yellowish or yellowish-orange colouration. The preferred aldehydes were: p-dimethylaminobenzaldehyde or salicylic aldehyde. The authors describe the use of vanillin as an analytical reagent for the determination of hydrazine and its derivatives, in spot tests and in spectrophotometric analyses. They claim that the reaction with vanillin is more sensitive than that with p-dimethylaminobenzaldehyde. It is also claimed that great excesses of hydroxylamine, nitrates, ammonium salts or urea do not interfere with the analytical method. The spectrophotometric determination of hydrazine or its derivatives is carried out in a Klett spectrophotometer.

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E112/E453

Identification and Spectrophotometric Determination of Hydrazine  
and its Derivatives by Means of Vanillin

using blue violet filter, Nr 42, with a wavelength of 420 m $\mu$ . The reaction of hydrazine or its derivatives with vanillin proceeds in an acid medium and the authors have studied the effects of different acids on the course of the reaction. It is shown that the absorption curves of hydrazine and semicarbazide with vanillin in a medium of sulphuric, perchloric or phosphoric acid is characterized by a sharp maximum in a range of 400 to 410 m $\mu$ . In an acetic acid medium, a maximum with a sharp notch appears at about 365 m $\mu$ . In order to establish whether hydroxylamine can interfere with the reaction its absorption in the same reaction medium was measured. Hydroxylamine showed a maximum absorption at 370 m $\mu$  and will, therefore, not interfere with the hydrazine or semicarbazide determination if filter Nr 42 of wavelength m is used. Analytical methods similar to that for hydrazine can also be used for phenyl hydrazine, p-nitrophenylhydrazine and vanillin gives an orange coloration in the spot test, with ✓

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E112/E453

Identification and Spectrophotometric Determination of Hydrazine  
and its Derivatives by Means of Vanillin

characteristic fluorescence under ultra violet light.  
2,4-dinitrophenylhydrazine gives a black colouration  
under the same conditions. Both reactions are, however,  
not very sensitive. The authors have also studied the  
effects of the concentrations of the acids on the  
spectrophotometric determinations and have established  
that results are unaffected by increased concentration.  
Large excesses of vanillin had also no effect upon the  
determination of either hydrazine or semicarbazide.  
There are 4 figures, 2 tables and 9 references, 3 of  
which are English, 1 Czech, 2 German, 1 Soviet and  
2 French.

ASSOCIATION: Katedra analytické chemie, Karlova universita, Praha  
(Chair of Analytical Chemistry, Charles University, Prague)

SUBMITTED: June 15, 1959

Card 3/3

✓

VULTERIN, J.; ZYKA, J.

Hydrazine sulfate as a volumetric agent (hydrozinometry). VI. Coll  
Cz Chem 25 no.1:206-209 Ja '60. (EEAI 9:12)

1. Katedra khimicheskoy promyshlennosti inzhenerno-ekonomicheskogo  
fakul'teta i Katedra analiticheskoy khimii Karlova universiteta,  
Praga.

(Volumetric analysis) (Hydrazine sulfate)

ZYKA, Jaroslav, prof. dr. PhMr.CSc.

Survey of the newest oxidation-reduction measuring methods.  
Rudy 12 no. 6:177-180 Je '64.

1. Chair of Analytical Chemistry, Charles University,  
Prague.

ZACHAROV, V.A. [Zakharov, V.A.]; DOLEZAL, J.; ZYKA, J.

Application of oscillographic polarography in quantitative analysis. Pt.20. Coll Cz Chem 29 no.9:2240-2241 S '64.

1. Kasachische Staatsuniversitat, Alma-Ata, UdSSR (for Zakharov).
2. Institut fur analytische Chemie, Karlsuniversitat, Prague (for Dolezal and Zyka).
3. Member, Advisory Board, "Collection of Czechoslovak Chemical Communications" (for Zyka).

BERKA, A.; JANATA, J.; ZYKA, J.

Contribution to the factor determination of lead (IV)-acetate  
mass solutions. Coll Cz Chem 29 nc.9:2242-2244 S '64.

1. Institut fur analytische Chemie, Karlsuniversitat, Prague.

NOVOZAMSKA, Helena; ZYKA, Jaroslav

Colorimetric determination of copper in some food products by  
tetraethylthiuram disulfide. Prum potravin 15 no:10:520-522, 0  
'64.

1. Chair of Analytical Chemistry, Charles University, Prague.

DOLEZAL, J.; LUKSYTE, E.; RYBACEK, V.; ZYKA, J.

Reductometric titration with iron (II) sulphate in triethanolamine medium. Chem Cz Chem 29 no.11:2597-2606 N '64.

1. Institut fur analytische Chemie, Karluniversitat, Prague.
2. Present address: Chemische Fakultat, Universitat, Vilnius, Lithuania (for Luksyte).

L 3043-66 EWP(t)/EWP(b) IJP(c) JD  
ACCESSION NR: AP5026312

cz/0008/65/059/001/0091/0094

AUTHOR: Bilikova, Anna; Zylka, Jaroslav

TITLE: Determination of microgram quantities of copper in water using tetraethylthiuramdisulphide (dicupral)

SOURCE: Chemicke listy, v. 59, no. 1, 1965, 91-94

TOPIC TAGS: copper, microchemical analysis, organic sulfur compound, spectrophotometric analysis

ABSTRACT: The method described is a spectrophotometric method. Cu ions form a yellow colored complex with the reagent; the complex remains stable for several days. Direct determination of Cu is possible in the presence of up to 2 mg/l of Ca, Mg, Al, Mn, Zn, Pb, Cd, Hg, Co, Ni, and up to 0.5 mg/l of Fe, and Cr. Details of the analytical method are given. "The authors thank A. Konradova for technical assistance." Orig. art. has 1 figure and 1 table.

ASSOCIATION: Vyzkumny ustav vodohospodarsky, Bratislava (Research Institute of Hydrology); Katedra analytickyj chemie Karlovej university, Prague (Department of Analytical Chemistry, Charles University)

SUBMITTED: 24Mar64

NO REF SOV: 000

Card 1/1

ENCL: 00  
OTHER: 012

SUB CODE: IC, GC  
JPRS

CZECHOSLOVAKIA

SANTRUCKA, J; NEKED, I; ZYKA, J

Institute of Analytical Chemistry (Institut für  
analytische Chemie), Karlova University, Prague -  
(for all)

Prague, Collection of Czechoslovak Chemical Communications,  
No 7, July 1966, pp 2679-2688

"Oxidimetric detection of cobium in an acid medium."

TISHCHENKO, G.N.; ZYKALOVA, K.A.; SILANT'YEVA, I.A.

Crystallographic study of iodomercurate gramicidin C.  
Kristallografiia 9 no.1:37-43 Ja-F '64.

(MIRA 17:3)

1. Institut kristallografii AN SSSR.

ZYKAS, V.

On the problem of postoperative thromboembolism. Sveik. apsaug.  
8 no.1:6-11 Ja'63.

1. Kauno Valst. medicinos instituto fakultetines chirurgijos  
katedra. Vedejas - doc. med. m. kand. J.Jarzemskas.

ZYKIN, A., starshiy nauchnyy sotrudnik

Powdery mildew on potatoes. Zashch. rast. ot vred. i bol. 10 no.3:  
33 '65.  
(MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut rasteniyevodstva.

ZYKIN, A.I., kand.med.nauk

Observations on correct posture at the school desk. Zdrav. Bel.  
7 no.9:54-55 S '61. (MIRA 14:10)

1. Iz kafedry organizatsii zdravookhraneniya L'vovskogo meditsinskogo  
instituta (zav. kafedroy - dotsent S.Z.Tkachenko).  
(POSTURE) (SCHOOLS—FURNITURE, EQUIPMENT, ETC.)

27554, 1.

"The new desk design."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists  
and Infectionists, 1959.

ZYKIN, A.I.; SHAPIRO, A.D.

Prevention of mercury poisoning while checking water gauging equipment. Gig. i san. 21 no.9:91 S '56. (MLRA 9:10)

1. Iz L'vovskoy gorodskoy sanitarno-epidemilogicheskoy stantsii.  
(MERCURY--TOXICOLOGY) (PRESSURE GAUGES)

ZYKIN, A.S.

Cutter for removing casting skin from titanium ingots. Stan.  
1 instr. 36 no.6:42 Je '65. (MIRA 18:8)

LEBEDEV, V.A., inzh. (Sverdlovsk); ZYKIN, B.D., inzh. (Sverdlovsk);  
KUDRYAVTSEV, A.Ye., inzh. (Sverdlovsk); SVYATETSKAYA, E.L., inzh.  
(Sverdlovsk); SYROMYATNIKOV, V.N., inzh. (Sverdlovsk)

Conversion of the control system of the AP-25 turbine to hydraulic  
operation. Energetik 13 no.10:11-14 0 '65.

(MIRA 18:10)

ZYKIN, B.N.

Use to greater advantage the potentialities of labor productivity in the industry of Siberia. Izv. Sib. otd. AN SSSR no.9:3-12 '62. (MIRA 17:8)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 10204-07 EFT(d)/EM(1) IJP(c) BL/GG  
ACC NRT AP7003100

SOURCE CODE: UR/0105/66/000/006/0023/0025

25  
24

AUTHOR: Bayev, A. V.; Zykin, F. A.; Ushakov, I. M.

ORG: none

TITLE: Network simulator for computing the optimum operation of power systems

SOURCE: Elektrichestvo, no. 6, 1966, 23-26

TOPIC TAGS: computer design, electric network, electronic engineering

ABSTRACT: The article describes the principle and operation of a network model-computer designed and built at the Chelyabinsk Polytechnic Institute. This device simulates actually installed power networks and automatically determines the most economical use of equipment under whatever prevailing load conditions. The ultimate aim is to establish the minimum fuel cost and this leads to the solution of four series of equations involving: 1) derivatives of fuel cost with respect to load on the station, 2) derivatives of power losses in the network with respect to terminal station voltages and with respect to increments of regulated transformer voltages. The essential components of this device are: 1) automated electronic models of generator stations, 2) automated electronic models of system loads, 3) model of the electrical

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UDC: 621.142.33:621.311.153.001.24

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ACC NR: AP7003100

power network, 4) automated electronic models of regulated transformers, 5) instrumentation for measuring total losses in the power network, 6) automatic scanning to find the most economical mode of system operation, 7) limiter units for voltages in the system network as well as for the load on generators and synchronous compensators, 8) a measurement panel. The process of computing the network and its operation is followed-up step by step and the usefulness of each of the simulator components is thereby precisely defined. The device described here makes it also possible to stabilize the optimum mode of system operation automatically and without interruption. Orig. art. has: 2 figures and 3 formulas. [JPRS: 37,479]

SUB CODE: 09 / SUBM DATE: 20Nov64 .

network planning 14

Card 2/2 6/6

8(3)

AUTHORS:

Pinchuk, I.S., Candidate of Technical Sciences, Zyklin, F.A., Candidate of Technical Sciences SOV/105-60-1-16/25

TITLE:

Some Methods of Improving the Characteristics of Reactors With Direct Current Magnetization 17

PERIODICAL:

Elektrichestvo, 1960, Nr 1, pp 78-80 (USSR)

ABSTRACT:

The so-called characteristics of simultaneous magnetization  $B_{\sim} = f(H_{\sim}; H_0)$  are often taken as initial data for the computing of reactors with magnetization (Refs 1,2).  $B_{\sim}$  is the mean value of the amplitude of the alternating component of the magnetic induction.  $H_{\sim}$  is the mean effective value of the alternating component of the core magnetic field.  $H_0$  is the mean value of the constant field strength component of the magnetic field. The results of experimental investigations of the influence of some factors on the form of the characteristics are given here. To utilize the power of a motor at its peak speed as completely as possible, it is necessary to make the voltage in the reactor get smallest. This can be achieved

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Some Methods of Improving the Characteristics of Reactors With Direct Current Magnetization

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by reducing  $B_{av}$ , at a chosen number of windings of the working winding and core cross section. From this point of view it is desirable to obtain characteristics of simultaneous magnetization, at which there is a smallest possible inclination in their initial stage, depending not only on the type of steel but also on a number of other factors. The characteristics of a reactor with two magnetic conductors (Fig 1) for example, can thus be altered by varying the gap  $\delta$ . By increasing  $\delta$ , the  $B_{av}$  value can be reduced by 15-20% for the greatest field intensity of the magnetic field. The explanation for this process is given. Based on these statements, the shape of the sheet proposed in the paper (Ref 1) is unsuitable, the air gap being practically nil for this design. A considerable improvement of the reactor characteristics can be obtained by using split working windings (Fig 3). An explanation for this improvement is given. There are 5 figures and 2 Soviet references.

SUBMITTED: June 13, 1959

Card 2/2

112-57-8-16469D

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 8, p 65 (USSR)

AUTHOR: Zykin, F. A.

TITLE: A Possible Increase in Carrying Capacity of Electric Half-Wave Tuned  
Transmission Lines (Vozmozhnosti uvelicheniya propusknoy sposobnosti liniy  
elektroperedach, nastroyennykh na poluvolnu)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of  
Candidate of Technical Sciences, presented to Tomskiy politekhn. in-t (the  
Tomsk Polytechnic Institute), Tomsk, 1956.

ASSOCIATION: Tomskiy politekhn. in-t (the Tomsk Polytechnic Institute)

Card 1/1

ZYKIN, F.A., kand.tekhn.nauk

Problem concerning current distribution and losses in half-wave  
tuned electric power transmission lines. Energ. sbor. no.2:167#  
171 '59. (MIRA 15:1)

(Electric power distribution)

BYKOV, V.M., kand.tekhn.nauk; ZYKIN, F.A., kand.tekhn.nauk;  
USHAKOV, I.M., kand.tekhn.nauk

Device for measuring the total power losses in the model of  
an a.c. network. Izv. vys. ucheb. zav.; energ. 5 no.1:37-42  
Ja '62. (MIRA 15:2)

1. Chelyabinskij politekhnicheskiy institut. Predstavlena  
kafedrami elektricheskikh stantsiy, setey i sistem; teoreticheskikh  
osnov elektrotehniki; ekonomiki promyshlennosti i organizatsii  
proizvodstva.

(Electric power distribution)  
(Electric network analyzers)

ZYKIN, F.A., kand.tekhn.nauk

Losses and efficiency in an electric transmission line tuned on  
a half-wave. Izv.vys.ucheb.zav.; energ. 2 no.12:11-14 D '59.  
(MIRA 13:5)

1. Chelyabinskij politekhnicheskiy institut. Predstavlena  
kafedroy teoreticheskikh osnov elektrotekhniki.  
(Electric lines)

ZYKIN, F.A., kand. tekhn. nauk (Chelyabinsk); LYSKOV, Yu.I., inzh. (Moskva)

Tuned electric power transmission lines. Elektrichestvo no.12:  
81-83 D '63. (MIRA 17:1)

ZYKIN, F.A., kand.tekhn.nauk

Equation of heterogeneous electric transmission lines and wave  
processes under steady-state conditions. Izv.vys.ucheb.zav.;  
energ. 3 no.5:46-50 My '60. (MIRA 13:6)

1. Chelyabinskii politekhnicheskii institut.  
(Electric lines--Overhead)

ZYKIN, F. A.

Zykin, F. A. "The possibility of increasing the carrying capacity of electric transmission lines tuned to the half-wave." Tomsk Order of Labor Red Banner Polytechnic Inst imeni S. M. Kirov. Tomsk, 1956. (Dissertations for the Degree of Candidate in Technical Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-109; illl.

ZYKIN, F.A., kand.tekhn.nauk

Wave processes in the normal operation of electric power transmission lines with series and parallel connected reactances throughout the line. Energ. sbor. no.2:46-54 :59.

(MIRA 15:1)

(Electric power distribution)  
(Electric lines)